



## DRREA Big Picture News

July 2018

### Energy Efficiency Forum

On Tuesday August 21 at 10 am at Emerald Library energy efficiency guru Professor Alan Pears will present the talk below. He will also answer any of your energy questions. We hope to see you there. Please note this is an experimental, day time forum organised in partnership with Emerald U3A.

'How will disrupted energy policy, technology and climate change influence how I create a zero carbon, comfortable home with affordable energy bills in the Dandenongs?'

### Ethical Investment forum

This is scheduled for later in the year. Date, time and venue to be fixed.

### The NEG

If you have wondered what the NEG is and why some people are sceptical about it below are some recent comments by John Grimes of the Smart Energy Council on June 17. It provides some interesting insights. (See below)

"At 5 pm on Friday, the Turnbull Government released its latest paper on the National Energy Guarantee (NEG). This signals disaster for renewables.

The Turnbull Government is not budging. It is:

- \* Locking in a 26% reduction in electricity emissions by 2030. This target is on track to be met by 2020, and likely exceeded by 2022 due to the success of the Renewable Energy Target. This means no renewables will be built for the decade from 2020 to 2030.

- \* Refusing to guarantee State renewable energy targets.

- \* Committed to international offsets, meaning that if any emissions reductions were required they will be through unverifiable overseas projects, not Australian renewable energy projects.

This is a line in the sand moment. The NEG will not deliver any additional renewable energy projects between 2020 and 2030.

If State renewable energy targets are axed – and the Victorian scheme could be axed in November-solar and renewable energy projects will dry up and jobs will disappear”.

### Should Victoria adopt an EV target?

The joint Victorian upper house committee *Inquiry into Electric Vehicles* report has just been released.

## PTO

It is there that consideration is given to the forms of government support that could be offered to consumers who may be considering buying an electric vehicle.

So what did the committee think might work to support the uptake of EVs in Victoria? Quoting directly from their report:

There are a number of ways the Victorian Government could assist with the uptake of electric vehicles in the private market, namely by:

- Establishing a State electric vehicle target
- Reducing the upfront costs for consumers of electric vehicles in Victoria
- Offering non-financial incentives such as special vehicle lane access and parking privileges
- Future-proofing Victoria by supporting the development of a comprehensive and reliable network of electric vehicle charging infrastructure

The next question is therefore: will anything come from these findings?

DRREA has written about this to our local member and deputy Premier James Merlino asking “what is the state government going to do?”

Meanwhile according to Mark Butler, Federal Labor plans a major policy announcement on EVs, which he says will be essential not just to keep up with technology, but also to deal with emissions – with transport now being a major source of emissions in states and territories with a majority share of renewables such as South Australia, Tasmania and the ACT. *Renew Economy* June 13

## Solar powered can be sweet (Renew Economy May 31)

Mars Australia is going 100 per cent renewables, and will source all the power for its six Australian factories and two offices from a 200MW solar farm in Victoria.

Mars announced on Thursday that it has signed a 20 year power-purchase agreements (PPA) with Total Eren to produce the equivalent of all its electricity needs from the new Kiamal solar farm when it is complete in mind 2019.

## Ironie

Renewable tidal energy technology is set to be tested in one of Australia’s biggest coal ports in Gladstone, Queensland, marking the latest development in that region’s rapid shift to renewables that has been led by a number of significant utility-scale solar projects.

Sydney-based MAKO Tidal Turbines (MTT) and Gladstone Ports Corporation (GPC) say they are set to undertake a six month tidal turbine demonstration at the port, to investigate

how tidal power could contribute to Australia's future energy mix. From Renew Economy June 26

### Solar University

On June 7 Giles Parkinson reported in Renew Economy that "the University of Queensland has revealed plans to build a 64MW solar farm, a project that will see it become the first major university in the world to offset 100 per cent of its electricity usage through its own renewable energy asset"

"The [\\$125 million solar farm](#) – to be built near Warwick on the state's southern Downs region – will produce more than 154GWh a year".

### Birdsville drops geothermal

For several years now Birdsville has had a Geothermal Power station which at its peak contributed up to 20% Of the towns power. Last June it was announced that a new geothermal power plant would be built which would contribute 70% of the towns power. The other 30% would come from diesel. This has now been dropped in favour of a switch to distributed solar and storage.

### Aussie Green ahead of Elon Musk

University of New South Wales Professor Martin Green, has been awarded the 2018 Global Energy Prize. Known as Australia's "father of PV, Professor Green beat a shortlist that included Tesla's Elon Musk.

The University of New South Wales said on Thursday that Professor Green had been selected from 44 contenders from 14 countries by a committee of leading scientists, to share the prize with Russian scientist Sergey Alekseenko, an expert in thermal power engineering.

Green was honoured, UNSW said, for revolutionising the efficiency and cost of solar photovoltaics and making it the lowest cost option for bulk electricity supply.

Source:Renew Economy June 7.

### Recycling storage batteries

Much concern has been expressed about how recyclable some storage batteries are especially lithium type batteries. Below is one approach sent to me by a friend who worked as an engineer in the mining industry. Lets hope better ways are found in the future.

Robin, Michelle, Peter

Have a look at this paper; a thorough review of various methods of recycling these batteries. Umicore is a specialty precious metals recovery business, spun off from the parent company of the new smelter at Port Pirie; Umicore's process involves smelting the stripped batteries in a furnace, using a special slag.

There has been a lot of discussion (I've been involved in the flowsheet modelling) about treating ~ 5000 tonnes/annum of recycle batteries at Port Pirie, which could include electronic scrap (e.g. computer boards, Mobile phone boards, lead/acid batteries, Lithium battery material etc.)

It's not worth using the special slag in the Pirie furnace; about half of the feed material will be sulfide concentrates; the other half will be residues from the zinc smelters in the parent group (e.g. Hobart in Oz, Budel, Auby, Balen in Europe) .

These residues would normally be dumped; but leakages from the storage ponds into groundwaters have prompted a change of policy to smelt all these residues at Port Pirie in the new furnace. This will prevent local pollution and recover valuable metals (zinc, lead, silver, gold, copper, cadmium, germanium etc) into saleable products ; and send the waste materials (silica, alumina, iron etc) into an inert slag which doesn't leach out toxic metals into groundwaters.

The lithium in batteries can't be recycled in this approach; it goes to slag; the graphite is burnt out; but the copper, nickel and cobalt in lithium batteries is recovered for sale in products.

Other processes being worked on by Umicore may eventually succeed in being commercial for recovering values from lithium -ion batteries. But right now lead-acid and zinc-air batteries are much better prospects for recycling.

Some remote off-grid mining companies have set up solar (PV) power plants, with diesel backup for night time, and zinc-air batteries for frequency /voltage control and stabilisation. An ideal combination, with substantial savings in diesel costs.

**Big Battery** (Renew Economy June 13)

On the subject of batteries below is an excerpt from Renew Economy on June 7 about the arrival of Tesla Power Packs at a Victorian Solar Farm.

The first of more than 400 Tesla Powerpack batteries have begun arriving at Victoria's Gannawarra Solar Farm, as work gets underway on what will be one of the biggest solar and storage installations in the world.

The 60MW Ganawarra PV project in north-west Victoria – which was [connected to the grid just under two months ago](#) – is the first large-scale solar farm to be constructed and switched on in Victoria, and is jointly owned by Wirsol Energy and Edify Energy.

The batteries will make up the adjoining Gannawarra Energy Storage System – which will be a 25MW/50MWh Tesla Powerpack battery that will enable some of the solar plant's output to be time shifted into the evening, or peak demand periods.

### World first

The world's first floating offshore wind farm, the 30MW Hywind project in Scotland, has this week chalked up another first, with the addition of a 1MW onshore battery system, to store excess power from the wind turbines. This is the first time a battery storage project has been connected with an offshore wind energy project. From Renew Economy June 28.

### Climate Emergency declared

We conclude with some very important news of something that needs to happen world immediately wide. "As a result of local organizers' tireless work, the Berkeley City Council (in California) faced the truth of the climate and ecological crises and committed to protecting its residents and all life on Earth by unanimously declaring a climate emergency and endorsing a just citywide climate mobilization effort to end greenhouse gas emissions as quickly as possible!" Source: Climate and Health Alliance, June 14.

### What are new energy costs doing in America?

We can thank for 'Climate Code Red' for this info below. Average energy cost in North America The revolution in the cost of solar energy has upended the electricity market. This chart of Lazard's Levelized Cost of Energy, courtesy of Business Insider, shows that in North America, the cost of electricity from new installations of solar (without storage) and wind, at \$50 and \$45 per megawatt hour respectively, are cheaper than gas, half the cost of coal (\$102) and one-third the cost of nuclear power (\$148). The same fate has befallen coal in Australia. For more details click link below.

[http://feedproxy.google.com/~r/ClimateCodeRed/~3/zgIIrVl5S8g/our-energy-challenge-in-6-eye-popping.html?utm\\_source=feedburner&utm\\_medium=email](http://feedproxy.google.com/~r/ClimateCodeRed/~3/zgIIrVl5S8g/our-energy-challenge-in-6-eye-popping.html?utm_source=feedburner&utm_medium=email)

### Some pressure off electricity prices

On June 22 Renew Economy reported the following.

"According the Australian Energy Market Operator's annual gas market outlook, known as GS00 (Gas Statement of Opportunities), the thousands of megawatts of solar and wind generation in the development pipeline is forecast to reduce the east coast's reliance on gas-powered generation for electricity. This will take the pressure of prices and production"

We hope you found this Big Picture News informative